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Compassion Fatigue and the Emergency Department

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Abstract

Problem The emergency department (ED) is a high-stress environment. Nurses exposed to this stress for prolonged periods are subject to compassion fatigue (CF). The purpose of this quality improvement project was to identify and reduce the level of CF in ED nurses by implementing *Real Time Transformative Response*© (RTR). RTR© is a technique that uses combinations of neurofeedback response awareness, biofield therapy intervention, and clearing of unwanted energy.

Method A purposeful sample of ED nurses working at a moderately-sized, suburban, Midwestern hospital ED who were scheduled to work 24-hours or more per week completed a Professional Quality of Life Scale (ProQOL 5; version 5) before and after three-months of RTR© training.

Results A total of 34 ED nurses (*N*=34) completed RTR© training and ProQOL 5 surveys. The overall mean score for the pre-RTR© training survey was 107 (*sd* =1.1385), and the post-RTR© training survey was 106.613 (*sd* =1.1677) (*t* =1.6924, *df* =66, *p* =0.0476). Mean scores pre-and post-RTR© training: compassion satisfaction was 3.59 (*sd* = 0.9521*)* increased to 3.95 (*sd* = 0.7766) (*t* = 1.997, *df* = 66, *p* = 0.000), burnout was 2.71 (*sd* = 1.1501) decreased to 2.36 (*sd* = 0.9120) (*t* = 1.997, *df* = 66, *p* = 0.000), and secondary traumatic stress was 2.45 (*sd* = 1.0002) decreased to 2.25 (*sd* = 0.9143) (*t* = 1.997, *df* = 66, *p* = 0.0017).

*Implications for practic*e Training ED nurses on RTR© has implied improved coping abilities in stressful environments and may decrease the incidence of CF.

Compassion Fatigue and the Emergency Department Nurse

The Emergency Department (ED) is known to be an environment of high-stress due to its fast pace, long shifts, heavy workloads, exposure to traumatic events, overcrowding, and shortage of support (Rozo, Olson, Thu, & Stutzman, 2017). Nurses who experience this stress for prolonged periods of time are subject to compassion fatigue (CF), a condition ultimately contributing to chronic stress and physical or mental illness. Furthermore, CF is the result of secondary traumatic stress (STS) and burnout (BO) (Craigie et al., 2016; Stamm, 2010). As an acute condition, STS can occur in those frequently exposed to stress and can include symptoms of anxiety, intrusive thoughts or images, and behavioral avoidance (Rozo et al., 2017). Similarly, BO is a chronic, work-related condition associated with emotional exhaustion, frustration, fatigue, depression, and difficulty to work efficiently (Rozo et al., 2017).

Compared to other nursing professionals, ED nurses are at a greater risk for experiencing CF and may begin to experience difficulty with having compassion for others, hence the term "compassion" fatigue (Gómez-Urquiza et al., 2017). A nurse experiencing CF may suffer from symptoms of insomnia, hostility, irritability, and depression (Gómez-Urquiza et al., 2017). The nurse is not the only person who may suffer from these symptoms. Patients may experience a decrease in the quality of care received if they are being cared for by a nurse with CF.

Another factor affecting the stress level of the ED nurse is occupational stress. Occupational factors can contribute to increased levels of stress such as unsatisfactory work conditions, insufficient time to complete tasks, excessive workloads, patients who may be physically or verbally abusive, and personal characteristics

(Gómez-Urquiza et al., 2017). Nurses who work in the ED have an increased number of occupational stressors and are more likely to suffer from CF (Lu et al., 2015). In fact, the ED nurses experiencing CF may have increased absenteeism, job abandonment, poor healthcare quality, increased medication errors, and a reduction in patient safety; therefore, identifying and treating BO in ED nurses is important (Gómez-Urquiza et al., 2017).

Similarly, ED nurse CF is a contributing factor to vacant nurse positions which escalates costs through increased workloads and risk for medical errors and resulting in less time spent with patients (Bothma & Roodt, 2013). The ED is an unpredictable environment where developing interventions focused on psychological resilience and coping, instead of environmental interventions, may be more effective in reducing CF in nurses (Zeller & Levin, 2013). Nurses have an increased risk for neglecting their own self-care and are often unaware of their own physical or emotional stress which may impact their personal and professional health. Interventions designed to reduce the consequences of stress and improve self-care have been recommended.

One possible intervention is *Real-Time Transformative Response*© (RTR). The RTR© method is a combination of neurofeedback response awareness, biofield therapy intervention, and the clearing of unwanted energy (A. Boyd, personal communication, October 16, 2019). This method was developed in 2017 by Ashleigh Boyd who had knowledge in psychiatric techniques focused on stress reduction (A. Boyd, personal communication, October 16, 2019). The RTR© technique minimizes the use of old neuropathways while activating new ones to reduce anxiety, feelings of being overwhelmed, and post-traumatic stress disorder (PTSD).

The purpose of this quality improvement initiative was to identify and reduce the level of CF in ED nurses by implementing the RTR© technique. The aim of this study was to reduce CF by 10% in ED nurses over a three-month period. The outcome measures of interest were Professional Quality of Life Scale (ProQOL 5; version 5) scores: Compassion Satisfaction (CS), BO, and STS categorical scores. The question for study was: In ED nurses who worked 24-hours or more per week, what was the effect of RTR© on ProQOL5 scores when compared to ProQOL5 scores prior to RTR©?

Literature Review

The search engines utilized for this literature review were the Cumulative Index for Nursing and Allied Health Literature (CINAHL), Google Scholar, and PsychINFO databases. The key search terms were *compassion fatigue*, *burnout*, *emergency* OR *ED*, *nursing*, *intervention* OR *best practice*, *biofield science*, and *quality of life*. Publications were included if they were published between the years 2014 and 2019. Initially, there were 114 publications retrieved. Those excluded were publications not pertaining to nurses, not in the ED, or not related to ED nurse CF. Ultimately, there were 10 publications selected for this review. Themes were identified and included: prevalence of CF and biofield science.

The nursing profession is a stressful occupation. Two specific phenomena nurses can experience are STS and CF (Boyle, 2015). Workplace stress related to nursing is resulting in a CF epidemic, which is composed of STS and BO (Craigie et al., 2016). In addition, the emotional stress nurses experience from their rapport with patients and families may result in CF (Boyle, 2015). Alternatively, BO is associated with workplace stressors such as lack of companionship or teamwork, long shifts, increased workloads,

manager unresponsiveness, lack of staffing, and time restraints (Boyle, 2015). As a result, preventing CF has become a high priority to reduce occupational stress, BO and ultimately, employee resignations (Craigie et al., 2016).

Nurses in the ED are at high-risk for BO. A prospective, qualitative study was conducted by Rozo et al. (2017) to understand causes of BO in ED nurses and assist managers, administrators, and nurses to establish methods directed at decreasing BO (Rozo et al, 2017). Using a hermeneutic approach, work environment was the most common theme (Rozo et al., 2017). The results of this study suggested ED nurses experienced BO due to unstable, stressful, and occasionally violent environments (Rozo et al., 2017).

While work conditions are a contributing factor, exhaustion and feelings of low self-worth also increase risk for BO. Gómez-Urquiza et al. (2017) performed a meta-analysis to determine the prevalence of BO in a sample of 1,566 ED nurses based on the Maslach Burnout Inventory (MBI). The MBI categorized the BO subscales of emotional exhaustion, depersonalization, and personal accomplishment into low, medium, and high-level intensities. In the analysis of 13 studies involving ED nurses, the prevalence of each of the MBI BO subscales were ranged as: high emotional exhaustion (20%-44%), high depersonalization (23%-51%), and low personal accomplishment (15%-44%) (Gómez-Urquiza et al., 2017). The primary findings from this study suggested ED nurses experienced anxiety and stress related to unsatisfactory work conditions, time restraints, excessive workloads, and workplace violence and resulted in feelings of low self-worth and becoming high risk for BO.

Psychological resilience and coping strategies for stress vary for nurses employed in the ED. Occupational stress with a lack of reliable coping strategies is a frequently occurring problem in ED nurses (Lu et al., 2015). In China, a study of 127 ED nurses employed in five general hospitals were given coping strategies and two questionnaires on their stress (Lu et al., 2015). The average score of positive coping strategies was 2.19±0.35 higher than the norm (1.78±0.52) and the average score of negative coping strategies was 1.20±0.61 lower than the norm (1.59±0.66) with both sets of scores having a significant statistical difference (p<0.001) (Lu et al., 2015). Lu et al. (2015) determined occupational stress was derived from workload and time constraints, extensive documentation, equipment shortage, (night) shift, and staff shortages. These results may provide some guidance to ED nurse managers for strategizing how to reduce work related stress and address coping skills based on the stress.

An additional factor contributing to CF in ED nurses is emotional regulation. According to Salvarani et al. (2019), emotional regulation may influence the psychological health, patient rapport, and clinical performance of ED nurses. In a cross-sectional study examining predictors of BO, emotional regulation was the most identified and key indicator of BO in ED nurses (Salvarani et al., 2019). In their study of 97 ED nurses, BO level intensity, dispositional mindfulness, difficulties in emotional regulation, and empathy dimensions were measured using the MBI, Five-Facet Mindfulness Questionnaire (FFMQ), Difficulties in Emotion Regulation Scale (DERS), and Interpersonal Reactivity Index (IRI) (Salvarani et al., 2019). The FFMQ subscales revealed lower levels of emotional exhaustion (23.6%) and depersonalization (26%) which were associated with higher levels of acting with awareness (Salvarani et al.,

2019). The DERS subscales resulted in 28.5% of the emotional exhaustion variance, 21.5% of depersonalization variance and 13.8% of the personal achievement variance (Salvarani et al., 2019). The IRI subscales found 12.5% of an emotional exhaustion variance, 11.4% depersonalization variance, while the regression of the personal achievement scale showed no relevant contribution (Salvarani et al., 2019). Empathic concern and emotional exhaustion in ED nurses had a positive relationship, lower levels of emotional exhaustion and depersonalization were associated with higher scores on the perspective-taking (Salvarani et al., 2019). Finally, this study found BO had a negative relationship with dispositional mindfulness, emotion regulation abilities, and a cognitive empathetic attitude (Salvarani et al., 2019).

Interventions aimed at coping may be useful for ED nurses. Following a self-care and resiliency intervention provided to 21 nurses in a one-day workshop and three weekly mindfulness practice sessions, a reduction in nurse BO was observed (Craigie et al., 2016). A self-test measuring BO, STS, negative mood, self-compassion, CS, subjective quality of life, and general self-efficacy was conducted before, immediately after, and six months after the initial workshop (Craigie et al., 2016). The study included five reliable scales: ProQOL 5, Depression Anxiety Stress Scale (DASS), Spielberger State-Trait Anxiety Inventory form Y2 (STAI-Y2), Connor-Davidson Resilience Scale (CD-RISC), and the Passion for Work scale (PWS) (Craigie et al., 2016). Significant reductions for depression and BO scores were identified (Craigie et al., 2016). At one-month follow-up, there was a significant improvement in CS, as well as reductions in obsessive passion and stress; however, significant improvements across a number of symptom domains following the mindful self-care and resiliency (MSCR) intervention

was the primary finding (Craigie et al., 2016). Nearly half of the participants had BO scores in the high range at pre-test but fell to 15% by post-test and follow-up (Craigie et al., 2016). The results were maintained by the one-month follow up indicating these results were promising.

The prevalence of CF in ED nurses is high, and the incidence of CF can be due to many factors. In addition, staff shortage is a common problem. Limitations of the studies discussed in the literature review include a lack of generalizability to all experiences of nurses in the ED. Two studies discussed in the literature review were completed in other countries and may not correlate with nursing issues in the United States (Lu et al., 2015; Salvarani et al., 2019*)*.

Creating a work environment to minimize the risk factors causing CF is essential. Findings suggest the importance to improve ED nurse resiliency which can be achieved by identifying effective workplace strategies. Workplace interventions may represent a possible approach to improving resiliency and well-being among ED nurses. Jain et al. (2015) brought awareness of and integration of biofield science into the clinical setting. Biofield science is the field of energy composed of measurable electromagnetic and hypothetical subtle energy, and information surrounding and interpenetrating the human body. The application of bioelectromagnetics in psychiatric and neurodegenerative disorders has been increasing (Jain et al., 2015). Clinical application of biofield science is now being explored in nursing because it has been found to influence and enhance aspects of the healing response within the body.

Integrative medicine was created to blend Eastern and Western medical approaches. These integrative approaches referred to as “healing” by returning to

wholeness may be spiritual, physical, psychological, or all three. While Western medical terminology uses “cure” as an elimination of a disease, the treatment of disease can cause trauma emotionally and spiritually rendering the disease as cured, but the person is still not whole. Hufford, Sprengel, Ives, and Joans (2015) described obstacles when utilizing biofield healing into mainstream contemporary science and clinical practice. The lack of clinical research on biofield therapy has brought forth skeptics to label it as “*pseudoscience”* even though Western medicine is based upon concepts from ancient times; whereas, integrative medicine is a peer-reviewed approach to gathering concrete data allowing for techniques, information and discoveries to be accepted within the mainstream medical field (Hufford et al., 2015).

Understanding biofield physiology is important when considering integrative medicine alternatives. Hammerschlag et al. (2015) discussed biofield physiology as self-regulation and organization of our living systems: cells, tissue and whole organisms responding to electromagnetic, biophotonic, and other types of spatially distributed fields. Biofields can affect physiological regulatory systems and are derived from medical physiology, cell biology, and biophysics (Hammerschlag et al., 2015). Electrical and magnetic fields are generated by a detection of neurons and heart cells, respectively. Examples include electrocardiograms (ECGs) or magnetocardiograms (MCGs) and electroencephalograms (EEGs) or magnetoencephalograms (MEGs) of clinically relevant biofields (Hammerschlag et al., 2015). Electromagnetic activity can be measured with neural assemblies with neuronal synchronization (Hammerschlag et al., 2015). A physiological role for biophotons can be observed with cerebral energy metabolism, cerebral blood flow, and EEG activity (Hammerschlag et al., 2015). Biofield receptors are

reviewed in three categories: molecular-level receptors, charge flux sites, and endogenously generated electric or electromagnetic fields (Hammerschlag et al., 2015). Biofield physiology has concrete evidence existing within human bodies and can be used as a scientific discipline.

Measuring the effects of CF and techniques designed to reduce CF may be best achieved by using the Professional Quality of Life Tool (ProQOL 5). In 1988, the original version of the ProQOL instrument was created by Charles Figley in collaboration with Beth Stamm (Stamm, 2010). The instrument shifted entirely to Stamm in the late 1990s through a joint agreement and now has several versions (Stamm, 2010). The ProQOL 5 tool has been extensively used to identify and measure CF and CS in the healthcare field. The validity and reliability of this tool have been established (Stamm, 2010). The ProQOL 5 (version 5) consists of three subscales used to measure CF with two of the subscales measuring BO and STS, and the third subscale measuring CS (Stamm, 2010).

Finally, the Stetler Model of Evidence-Based Practice was first developed in 1976, refined in 1994, and again in 2001 (Stetler, 2001). This model is based on the use of information obtained being affected by the elements of the user's internal characteristics and external environment (Stetler, 2001). This model consists of five phases: preparation, validation, comparative evaluation/decision making, translation/application, and evaluation (Stetler, 2001). The phases have each been designed to promote critical thinking about the implementation of research findings and to lessen some of the human errors made in decision making (Stetler, 2001). The Stetler Model provides a structure on how to create formal change within an organization using

evidence and was be the model used in this project since it provided a structure linking the relationship between research and evidence-based practice (Stetler, 2001).

Method

Design

This was a quality improvement initiative with an observational, descriptive design using retrospective survey reviews for analysis. A self-administered, ProQOL5 (version 5) survey was completed by ED nurses in October 2019 during annual mandatory training to identify the initial level of CF within the department and to determine if an intervention was necessary. At that time, nursing administration decided the need to implement an intervention to reduce CF in nurses working within the department. A Plan-Do-Study-Act (PDSA) cycle was planned (Institute for Healthcare Improvement, 2019) and included a repeat ProQOL 5 (version 5) survey and videotaped RTR© technique instruction was provided to ED nurses in March 2020. A follow-up ProQOL 5 (version 5) survey was distributed after the RTR© instructional videos were viewed in May 2020.

Setting

A moderately-sized, suburban, Midwestern hospital ED located in a metropolitan area with 42 hospitals serving over three million residents. This is a general ED, but not a trauma center, caring for approximately 40,000 patients per year. There were 28 full-time nurses (i.e., 36-40 hours per week), six part-time nurses (i.e., 24-35 hours per week), and nine nurses scheduled as needed (i.e., less than 24 hours per week) at the time of this study.

Sample

A purposeful sample of ED nurses who were scheduled to work 24-hours per week or more was selected. Inclusion criteria were active employment as a registered nurse (RN) in the ED, scheduled to work 24-hours or more per week, and completion of the ProQOL 5 (version 5) survey in March 2020. Exclusion criteria were employment in other departments of the hospital or not employed an RN in the ED, scheduled to work less than 24-hours per week, or those who did not complete the ProQOL 5 (version 5) in March 2020.

Approval Processes

Approval from the hospital's ED administration was obtained. Approvals from the doctor of nursing practice (DNP) committee, hospital and university institutional review boards (IRB) were also obtained. Risks from this study were minimal as it was a retrospective analysis of ED nurse responses to the ProQOL 5 (version 5) surveys. The ED nurse identity was protected as personal identifiers were not available on the surveys, and participation in survey completion was voluntary. Benefits of this study included enhanced coping mechanisms, taught or practiced, for ED nurses working in a stressful environment.

Data Collection/Analysis

The pre-RTR© training ProQOL 5 (version 5) survey was distributed to ED nurses from March 1 through March 8, 2020 via an anonymous email link from the Qualtrics™ survey software program. The post-RTR© training ProQOL 5 (version 5) survey was distributed May 4 through May 11, 2020. The data recorded for analysis included the overall ProQOL 5 scores and the ProQOL 5 categorical scores for CS, STS, and BO. Recorded data was coded as 3-1, 3-2, 3-3, and so on for each ED nurse who

completed the survey in March 2020 and 5-1, 5-2, 5-3, and so on for each nurse who completed the survey in May 2020. All the data collected was stored on a password protected computer and a password-protected removable drive owned by the principal investigator (PI). Data was analyzed using descriptive statistics and paired-samples *t* tests using Intellectus Statistics™.

Procedures

A team of stakeholders in the ED convened and included the ED nurse director, nurse manager, nurse educator, and the PI. The concept of CF was thought to be a contributing factor to the ED nurse vacancy rate; therefore, nursing administration required completion of the ProQOL (version 5) in October 2019 to determine if CF was prevalent within the department. Due to the moderate risk found for CF, video and training practices were developed by Ashleigh Boyd and the PI and repeat ProQOL 5 (version 5) surveys were planned before and after the RTR© training sessions.

There were three videos developed. The first video (2 minutes 27 seconds) was a brief introduction of the RTR© technique and its benefits. The second video (6 minutes 11 seconds) included education about RTR© techniques. The third and final video (16 minutes 36 seconds) provided a guided training session utilizing RTR© for the participant to follow and practice. The ED nurses completed viewing of the videos at their convenience between March 9 and May 3, 2020.

Results

The ProQOL 5 (version 5) survey consisted of three categories: CS, BO, and STS. A Likert scale for each question ranged from 1- to 5: 1 = never, 2 = rarely, 3 =

sometimes, 4 = often, and 5 = very often. The number of subjects was 34 (N = 34) who viewed all three videos and who completed the pre- and post-RTR© training surveys. Of this, 12 RNs had less than one-year experience (n = 12, 35%); five had one- to two-years of RN experience (n = 5, 15%); and 17 had greater than 3-years of experience (n = 17, 50%) (Appendix A).

A paired-samples *t*-test was conducted to compare the overall mean difference of pre-RTR© and post-RTR© training survey results. The overall score for the pre-RTR© training survey had a mean of 107 (SD =1.1385), while the mean score for the post-RTR© training survey was 106.613 (sd =1.1677). The difference between the two means was statistically significant at the .05 level (t =1.6924, df = 66, p = 0.0476). There was a significant improvement in the overall scores of CS, BO, and STS when RTR© training was provided (Appendix B). RTR© training appeared to have a positive impact on the ProQOL 5 (version 5) scores.

Each category was also compared using the paired-samples *t*-test. The mean ProQOL 5 (version 5) score for CS pre-RTR© training was 3.59 (sd = 0.9521*)* and was 3.95 (sd = 0.7766) post-RTR© training. The difference between the two means for CS was statistically significant at the .05 level (t = 1.997, df = 66, p = 0.000). RTR© training appeared to have significantly improved CS scores. The mean score for BO, pre-RTR© training was 2.71 (sd = 1.1501) and 2.36 (sd = 0.9120) post-RTR© training. The difference between the two means for BO was statistically significant at the .05 level (t = 1.997, df = 66, p = 0.000). There was a significant decrease in BO scores following RTR© training. Finally, the mean score for STS pre-RTR© training was 2.45 (sd = 1.0002) and the mean score post-RTR© training was 2.25 (sd = 0.9143). The difference between the

two means for STS was statistically significant at the .05 level ($t = 1.997$, $df = 66$, $p = 0.0017$). RTR© training appeared to have significantly decreased the STS scores.

Discussion

ED nurses may suffer from CF as a result of intense work environments. The purpose of this quality improvement study was to determine if RTR© was effective in alleviating CF in ED nurses. The study appeared to have successfully achieved the aim of this study by decreasing the overall CF by 10.17% in three months. Participant demographics were not collected. Fortunately, the same number of nurses who did the pre-RTR© training survey, completed the post-RTR© training survey. There was a 100% participation rate in this study with the help of nursing administration. Bi-weekly reminders to participants were provided through a social media page set up for ED staff members and through daily meetings before shift changes.

The ProQOL survey instrument is designed to analyze the three subscales together when determining CF among a sample because CS acts as a moderator between the BO and STS subscales. Each of the subscales is distinct and the results of the subscales should not be combined in a single score. The ProQOL 5 survey included 10-questions for each subscale, multiplied by 34 participants and resulted in 340 responses to encompass each subscale. While the ProQOL 5 is not a diagnostic instrument, it does provide valid information for use.

A paired-samples *t*-test determined RTR© was successful at decreasing BO and STS and improving CS levels in ED nurses. Nurses who were offered the option to participate in the study showed a willingness to assist in further understanding of CF. The prevalence of CF is increasing, and it has the potential to influence the field of nursing as

well as other areas of healthcare, which is why exploring the implications of CF is necessary.

A strength of this study was 100% of participation of the ED nurses pre-RTR© and post-RTR© training. A potential limitation of this study was the use of ED nurses only, however, ICU nurses, medical-surgical nurses, and other nursing disciplines may also suffer from CF. Recommendations for a future study includes using a larger sample size, another nursing department, and studying CF over a longer period of time.

Conclusion

In one moderately-sized, suburban, Midwestern ED, CF was decreased when RTR© training was provided. Understanding the concept and signs of CF will assist nurses in maintaining their compassionate and caring attitudes towards patients and their families. When ED nurses experience CF, it may negatively affect the empathetic relationship between the patient and the nurse. Introducing RTR© as a coping mechanism to decrease CF in ED nurses has demonstrated positive results. RTR© training has improved the CS levels and decreased the BO and STS levels based off this study. Although, findings suggest CF in ED nurses could be decreased with enhanced coping skills, modifying the way nurses respond to stress may be even more effective to improve CF globally.

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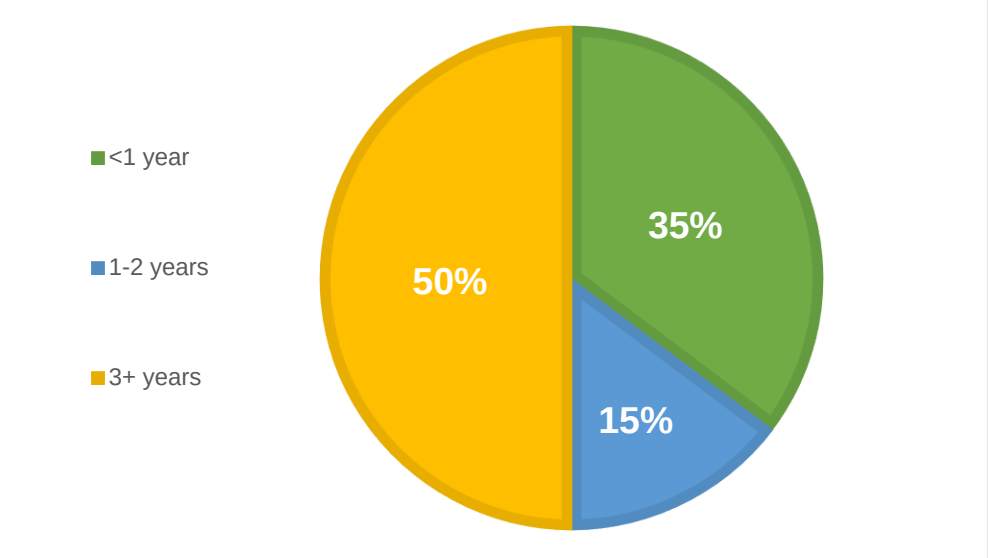
Appendix A

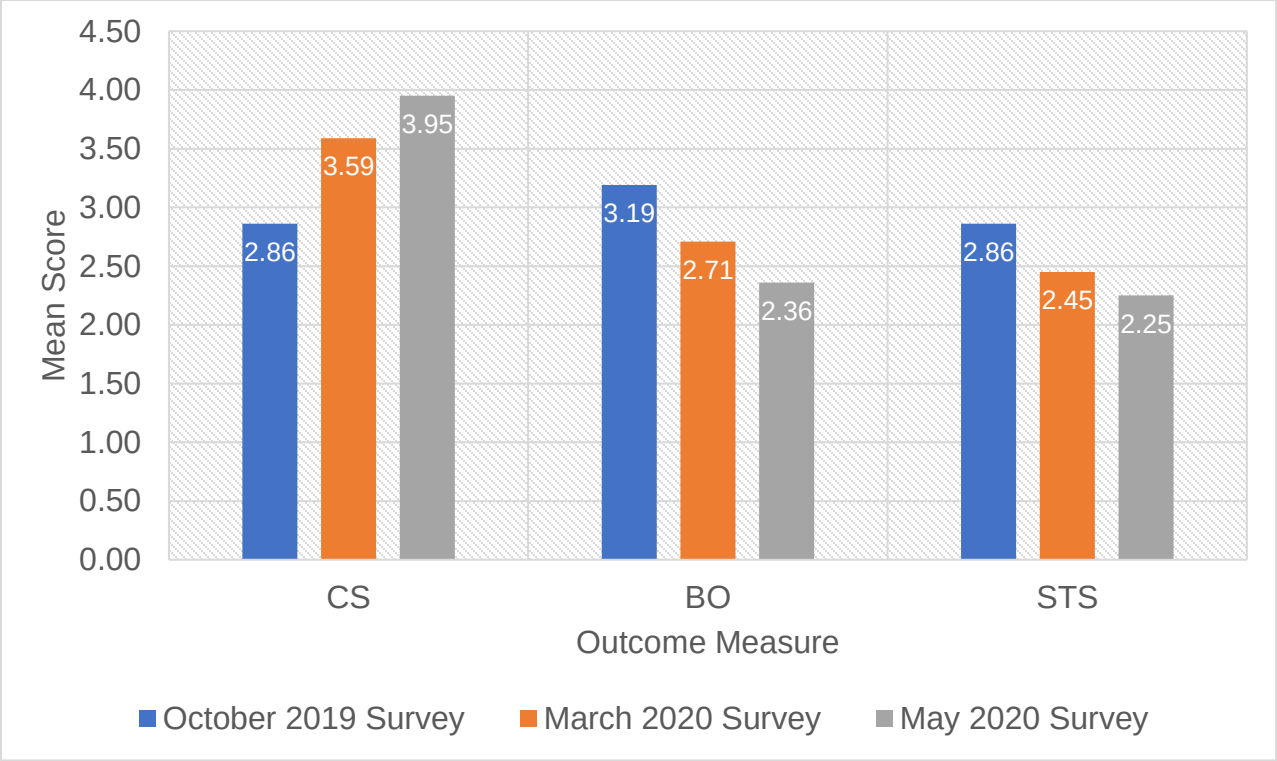
Figure 1. *Years of RN Experience*



Note. There was a total of 34 nurses (*n* = 34) who work 24 or more hours per week as an RN at SSM St. Clare ED.

Appendix B

Figure 2. *ProQOL 5 (version 5) Survey Means by Category*



Note: CS ($t = 1.997$, $df = 66$, $p = 0.000$); BO ($t = 1.997$, $df = 66$, $p = 0.000$); and STS ($t = 1.997$, $df = 66$, $p = 0.0017$)